Soybean oil

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01

Introduction of Soybean oil

Introduction

¶ Soybean oil is a vegetable oil extracted from the seeds of the soybean .

¶ Scientific name of Soybean: *Glycine max* (L.) Merr.

¶ Family : Fabaceae

•Legumes of soybean

Soybean oil

02

The History of Soybean oil

The History of Soybean

¶ Soybeans were cultivated as long ago as 2800 BC in China , where it was considered one of the five sacred grains.

¶ United States is the largest producer of soybeans in the world .

¶ In India, Soybeans was introduced from China in tenth century AD through the Himalayan routes ,and also brought in via Burma (now Mayanmar) by traders from Indonesia .

Soybeans

01

The black-seeded soybean has been traditionally grown in North and North-eastern regions of India and further spread to different parts of the country.

02

The cultivation was further picked up after the researchers took advantage of yellow-seeded material to develop high-yielding varieties that suited Indian conditions .

03

Extraction and Processing

Soybean oil Extraction and Processing

¶ Modern soybean processing starts with solvent extraction to obtain crude oil and defatted meal.

¶ Most defatted meal is used for animal feed and only a small portion is further processed into different types of soy protein products for human consumption).

¶ Crude oil contains variable amounts of non-triglyceride materials.

¶ To remove some of these impurities from the crude soy oil and convert it to a high quality edible oil, it is necessary to subject crude oil to a series of refining operations, including degumming to remove lecithin, neutralization to separate out free fatty acids and bleaching to remove pigments
and the residues of previous refining steps.

¶ Deodorization is the final operation, which removes volatile components by steam distillation.

¶ The final product is a refined, bleached, and deodorized oil, commonly known as RBD oil. However, due to its high concentrations of polyunsaturated fatty acids, natural, refined soybean oil still has susceptibility to oxidation and off-flavor formation.

¶ It also has limited range of functionality. To overcome these limitations for wider food applications, additional processes, including hydrogenation, interesterification, winterization and/or fractionation, are often necessary.

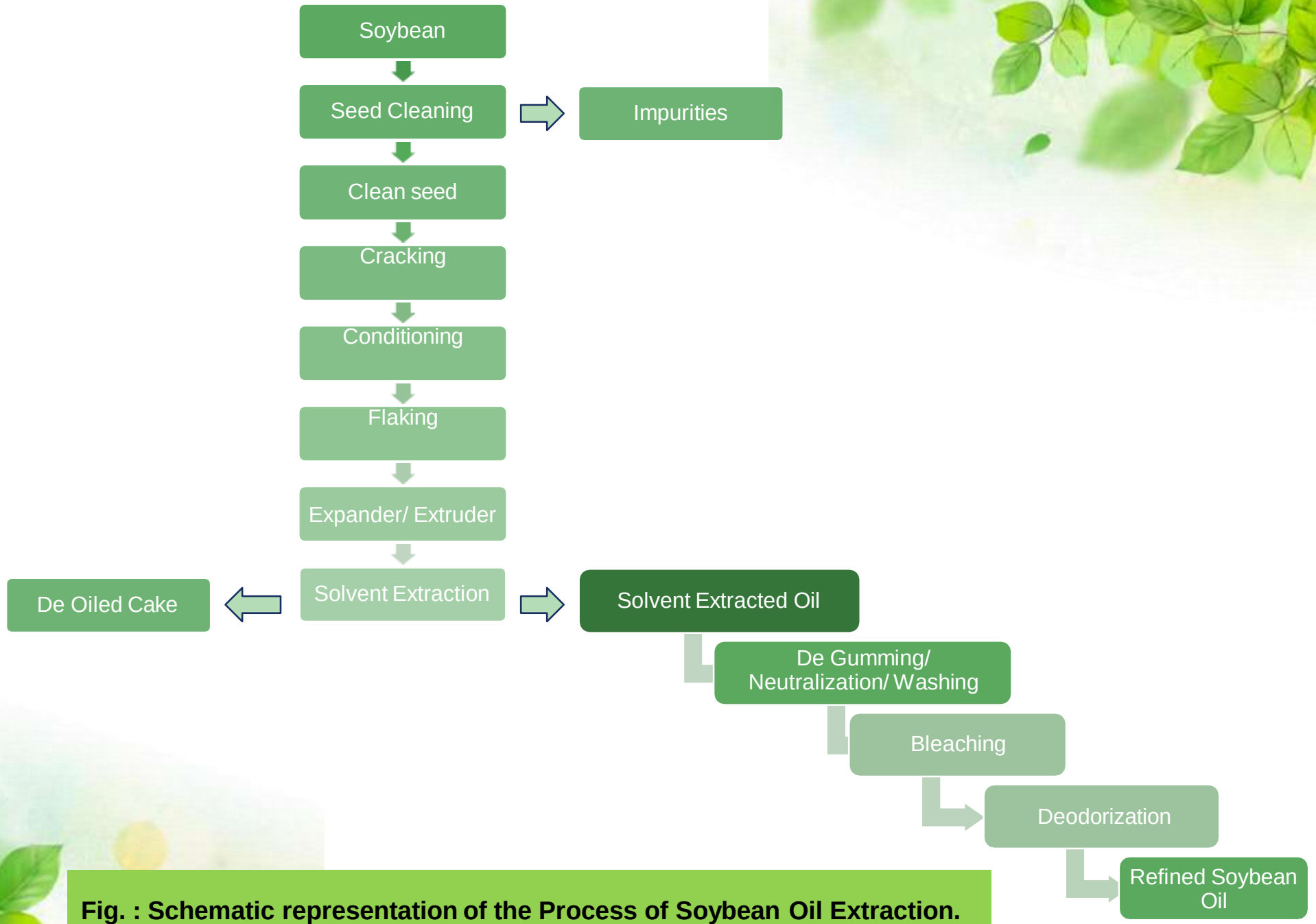

Fig. : Schematic representation of the Process of Soybean Oil Extraction.

Soybean oil

04

Composition and uses

Chemical composition

¶ Soybean oil, a vegetable oil extracted from the seeds of the soybean (Glycine max), has an oil content accounting for around 22% of the dry seed (Gerde *et al.*, 2005).

¶ Per 100 g, soybean oil has 16 g of saturated fat, 23 g of monounsaturated fat, and 58 g of polyunsaturated fat.

¶ It is one of the most widely consumed cooking oils and is rich in linolenic acid, which more readily undergoes oxidative deterioration, producing a beanlike smell.

¶ From the viewpoint of nutrition, soybean oil contains7–10% palmitic acid, 2–5% stearic acid, 1–3% arachidic acid, 22–30% oleic acid, 50–60% linoleic acid, and 5–9% linolenic acid.

¶ The fatty acid composition of soybean oil includes a high level of polyunsaturated fatty
acids that significantly lower serum cholesterol levels, reducing the chance of
cardiovascular ailments.

Versatile and Uses

Cooking oil

Soybean oil has a mild , neutral taste that can fit seamlessly into nearly any recipe that calls for cooking oil.

Salad dressing

It works especially well paired with vinegar and a dash of salt and paper to make an easy salad dressing.

Natural moisturizer

Apart from cooking with soybean oil , you can apply it to your hair or skin to act as a natural moisturizer .

Versatile and Uses

Carrier oil

Further more, some people use it as carrier oil to dilute essential oils before applying them to the skin .

Other uses

Thanks to its high smoke point, it can be used in place of other cooking oils for high - heated cooking methods like frying, baking , roasting or saulteing .

05

Advantages and Disadvantages

Advantages

¶ May support bone health
¶ It promotes skin health
¶ It promotes heart health

Disadvantages

¶ soy can cause mild stomach and intestinal side effects.
¶ It can also cause allergic reactions involving rash and itching.
¶ soy might also effect thyroid function .

References

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THANK YOU

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